

DETAILED WORK PLAN

INVESTIGATION OF FORMER REPUBLIC CREOSOTE SUPPLY WELL (USGS W23)

US EPA RECORDS CENTER REGION 5



514572

JUN 10 1982

MPCA
ATTORNEY GENERAL

TASK 100 - MOBILIZATION

The purpose of this task is to move all equipment, tools and materials to the well site in anticipation of the investigative activities. Mobilization includes all related drilling equipment, tools and materials, as well as a field office and a hazardous waste site (with security fence).

Task 101 - Pull Existing Four (4) Inch Casing

The existing four (4) inch casing from grade to the 400-foot level, including a packer installed at approximately 250 feet between the four and seven-inch casings, will be removed.

Task 102 - Install New Four (4) Inch Casing

Upon removal of the four (4) inch casing, four (4) inch casing will be set inside the existing seven (7) inch casing to a depth of 595 feet. Packers will be installed at approximately 585 feet and 250 feet below grade. The 585-foot depth packer is intended to provide a seal between the nominal seven (7) inch bore hole and the four (4) inch casing. The 250-foot depth packer is intended to minimize down-hole flow in the well bore from holes in the casing (10-inch) in the upper intervals of the St. Peter Sandstone.

Task 103 - Core Samples

Core samples shall be taken from the 595-foot level to a depth 10 feet below the bottom of the well bore (909 feet). Samples shall be obtained by split spoon, Shelby type, or suitable sampling tool.

A log of the cores will be maintained in the field and prepared in the lab. The samples shall be preserved for analysis under frozen conditions.

If core recovery is unsuccessful and rotary drilling methods used, a log will be maintained and samples taken at 50-foot intervals beginning at a depth of 600 feet. If the material removed from the well is visibly contaminated, samples will be taken at 25-foot intervals. All samples removed will be stored in glass jars rinsed in methylene chloride, and frozen.

Task 104 - Down-Hole Television Inspection

Upon completion of core/rotary drilling sampling, the entire well bore will be inspected with down-hole television. The entire television will be recorded on tape for further review and permanent records.

Task 105 - Geophysical Log of Well

A geophysical log of the bore hole will be conducted upon completion of the televising operation. The logging will be conducted by the Contractor after consultation with the USGS.

Task 106 - Water Samples -- Mt. Simon Sandstone

Upon completion of the geophysical logging activities, a 50 gallon per minute submersible pump will be installed. The pump intake will be set at approximately 875 feet in an attempt to draw water from the Mt. Simon Sandstone.

A 24-hour pumping test will be conducted, with water samples taken at 0, 8, 16 and 24 hour time intervals. Water from the well pump will be discharged to the storm sewer.

Water samples will be collected in one gallon dark glass bottles and analyzed for polynuclear aromatic hydrocarbons, phenolics, naphthalene, benzene and total organic carbon. EPA chain of custody and protocols will be used for all sampling and analytical methods approved by EPA.

Task 107 - Water Samples -- Jordan Sandstone

The four (4) inch casing, with packers, will be removed to a depth of 375 feet and a packer installed between the 4 and 7-inch casings to prevent down-hole flow.

A 50 gallon per minute test pump will be installed, with the pump intake at approximately the 400-foot level and a 24-hour test pump performed. Water samples will be taken at 0, 8, 16 and 24-hour time intervals. Water pumped from the well will be discharged to the storm sewer.

Water samples will be collected in one gallon dark brown glass bottles and analyzed for polynuclear aromatic hydrocarbons, phenolics, naphthalene, benzene and total organic carbon. EPA chain of custody and protocols will be used for all sampling and analytical methods approved by EPA.

Task 108 - Soil Sample Analysis

Soil samples will be frozen in the field as they are retrieved. The selection of samples for analysis will be made in consultation with the State. Samples will be analyzed by the Contractor for naphthalene, polynuclear aromatic hydrocarbons, phenolics and total organic carbon.

Task 109 - Well Abandonment and Reconstruction as a Monitoring Well

Based on the findings of the well investigation, soil analyses, and water analyses, the Contractor will prepare plans and specifications for abandonment and reconstruction as a monitoring well. Said plans and specifications will be prepared in consultation with the State.

TASK 200 - DISPOSAL OF HAZARDOUS WASTE

Coal-tar is regarded as hazardous waste by the State and will be disposed of in accordance with the provisions in the Minnesota Pollution Control Agency rules on hazardous waste (6 MCAR 4.9001-4.9010) and the EPA rules on hazardous waste.

The following activities will be provided for handling the hazardous waste:

1. All hazardous waste material removed in the well drilling operations will be stored in new containers meeting all the requirements of the EPA. All containers used will be gasketed and suitable for interstate transportation.
2. Hazardous waste containers will be stored on the site within a secured cyclone fence (6 feet high).
3. Hazardous waste containers will be stored in rows no more than 30 feet in length, five feet in width and six feet in height.
4. Procedures for personnel to follow in the case of spills of hazardous waste and in the case of fire and other emergencies will be posted in the field office at the project site.
5. Safety equipment for use during spills, fires or other emergencies will be available at the field office at the project site.
6. The Contractor shall obtain the necessary labels for hazardous waste containers and obtain authorization for disposal of the wastes at an approved landfill.

SEARCH, INVENTORY AND ABANDONMENT SPECIFICATIONS OF WELLS IN ST. LOUIS PARK

TASK 300 - FILE SEARCH

A file search will be conducted in St. Louis Park, Hopkins east of Highway 18, and the area of Edina north of Interlachen Boulevard and West 50th Street.

The search will involve examination of records from the following:

1. City of St. Louis Park
2. City of Hopkins
3. City of Edina
4. U.S. Geological Survey
5. Minnesota Geological Survey
6. Minnesota Department of Health
7. Minnesota Department of Natural Resources
8. E. H. Renner and Sons
9. McCarthy Well Company
10. Tri State Drilling Company
11. Bergerson Caswell Well Company

The examination of records from the above references will be compiled into a preliminary inventory for use in the door-to-door survey. The purpose of the preliminary inventory is to confidently eliminate some of the homes and businesses within the door-to-door survey without a trip to the field.

Task 301 - Door-to-Door Survey

A door-to-door survey will be conducted in the area bounded by West 28th Street on the north, France Avenue on the east, West 40th Street and Excelsior Avenue on the south, and Virginia Avenue on the west.

The door-to-door survey will involve contacting owners or occupants of all homes and commercial/industrial facilities within the search area, asking the contacted individuals if they are aware of any well(s) that exist or may have existed on their property. Information collected from each property owner will be recorded on a questionnaire.

If the initial contact is not made, a reply card will be left at the property owner in the hopes that information can be secured by phone.

If no reply is received from the property owner, two additional attempts will be made by the Contractor in order to secure the desired well information.

Task 302 - Data Inventory

The results of the file search and door-to-door survey will be compiled into a data inventory which will contain the following information:

A. Source

1. Name of owner/occupant
2. Address
3. Phone
4. Reason for knowledge of well
5. Date of occupancy
6. Unique well number

B. History

1. Well name
2. Well address and/or location
3. Driller and date drilled
4. Well depth and aquifer(s) penetrated
5. Present and previous owners
6. Current and past use

C. Inspection

1. Location verified and photographed
2. Hole or casing diameter and depth
3. Pump information
4. Near-surface casing integrity
5. Water level (if possible)

D. Geologic Log

The data inventory compilation will be computerized and used in the development of a comprehensive well abandonment program as outlined in Task 303.

Task 303 - Development of a Comprehensive Well Abandonment Program

The data inventory compilation will be used to identify and locate multi-aquifer wells which may provide a pathway for contaminated groundwater to enter the Prairie du Chien-Jordan or Mt. Simon-Hinckley aquifers.

The criteria for identifying important wells are depth and diameter (multi-aquifer wells), aquifers penetrating (i.e., Mt. Simon-Hinckley, Prairie du Chien-Jordan), type of construction (i.e., grouted versus ungrouted), proximity to areas of heavy contamination, and proximity to active wells.

Using the criteria above, all wells suspected of being contaminated or of providing a pathway for groundwater to enter the Prairie du Chien-Jordan or Mt. Simon-Hinckley aquifers will be categorized and identified.

Each well identified above will be individually studied in order to develop the proper abandonment procedure. In general, the abandonment program will include:

1. Identification of wells that should be further assessed and properly abandoned/reconverted.
2. Cost estimates for cleaning identified wells to original depth.
3. Cost estimates for proper abandonment as outlined in 7 MCAR 1, 218.C. of the Water Well Construction Code.
4. Cost estimates for reconvertng the well to a single aquifer monitoring well.
5. Cost estimates of obtaining alternative water supplies for active wells (i.e., reconstructed well, municipal hook-up).

Task 304 - Report

A report will be prepared, detailing the success of the search procedures, summarizing the number of homes and commercial/industrial facilities actually contacted, compilation of the inventory of suspected wells, and specifications for abandonment of identified wells.

All documentation gathered on wells will be compiled and included as an appendix to the report.

TASK 400 - INTERACTION WITH STATE AND CITY

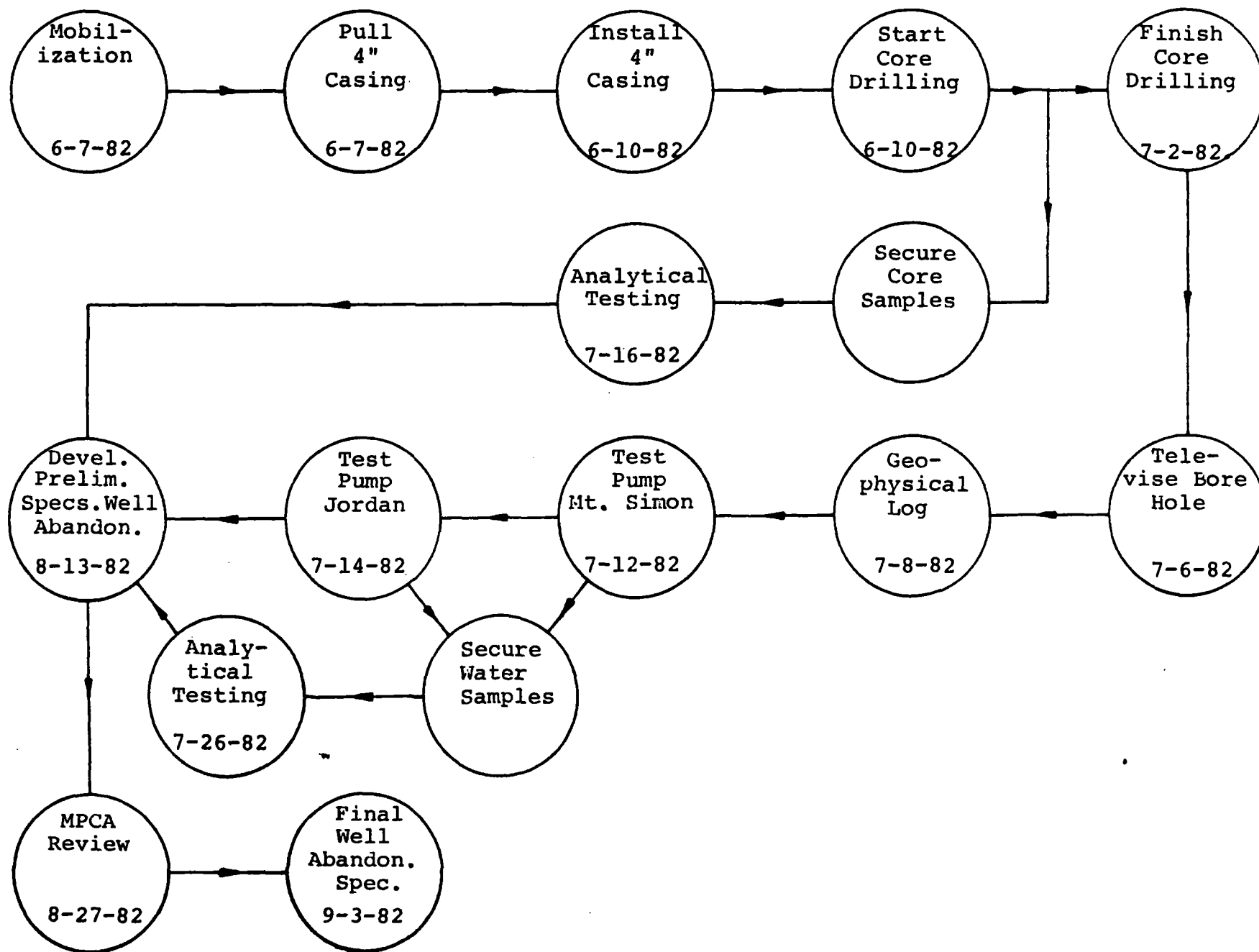
The Consultant shall weekly notify the State verbally of activity progress so that the State may plan to be available for on-site inspection and/or make decisions. The Consultant shall meet with the State and City the first Tuesday of each month. Monthly progress reports shall be prepared and submitted to the State and City three days prior to each meeting. The progress reports will highlight the activities of the previous month, project work for the following month, highlight programs encountered and the solutions implemented (including impacts on the work statement or expected costs), summarize expenditures, and provide a revised schedule. Copies of the progress reports should be distributed to the following individuals:

Jim Pankanin	U.S. EPA, Region V
Richard Bartelt	U.S. EPA, Region V
Lovell Richie	MPCA
Richard Ferguson	MPCA
Stephen Shakman	Attorney General, MPCA
Gary Englund	MDH
Richard Koppy	St. Louis Park

Upon completion of the entire project, the Contractor will submit a draft report to the above individuals for a review period of three weeks. The Consultant will take the comments into consideration and submit a final technical report. This will include a description of the completed tasks, a summary of problems encountered for the various tasks, detailed reports called for in the specific task descriptions, and the proposed plans and specifications for cleanup, abandonment, and reconstruction of W23, and wells identified in the survey. The proposed plans and specifications will also include a comparison of the effectiveness of various alternatives (permanent abandonment, reconstruction, no action, etc.), assessment of environmental impacts of taking such action, and assessment of methods for mitigating adverse impacts.

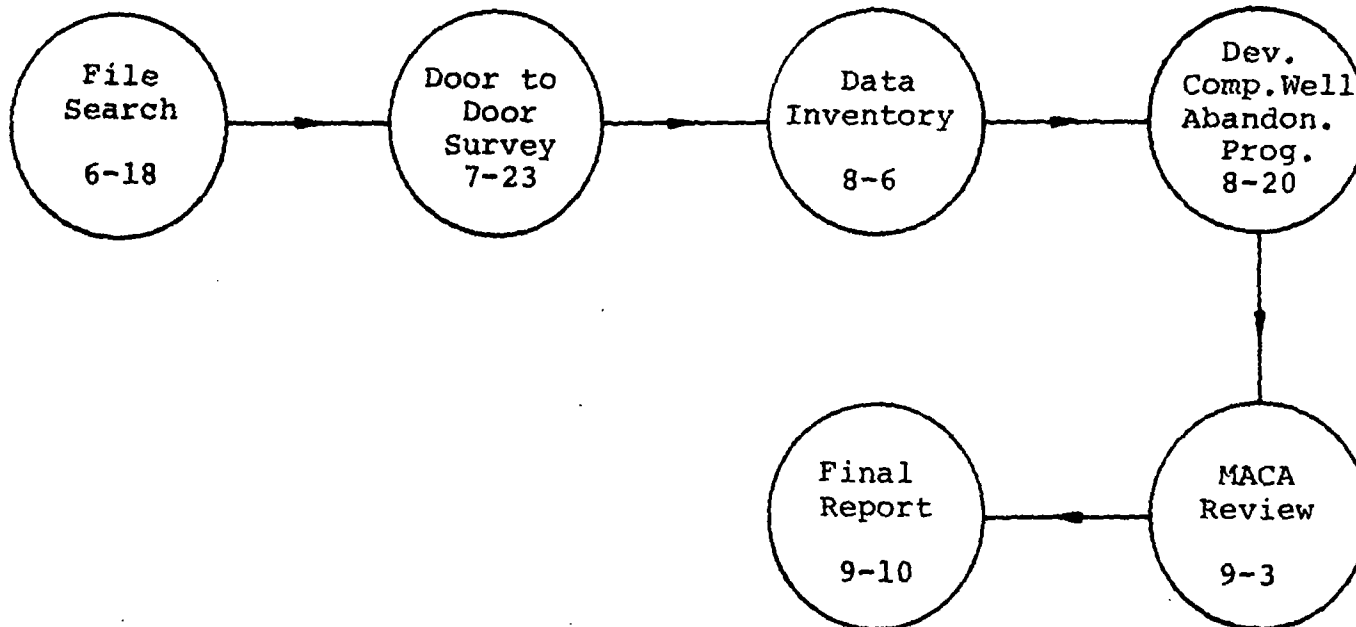
MILESTONE CHART

Republic Creosote Supply Well (USGS W23)



MILESTONE CHART

Search, Inventory and Abandonment Specifications
of Wells in the St. Louis Park Area



SAFETY EQUIPMENT

Safety equipment is located in the field office and consists of the following items:

- 1 nylon reinforced PVC jacket
- 1 nylon reinforced PVC bib overalls
- 2 pairs of PVC gloves
- 1 respirator with replacement chemical cartridge for acid gases and organic vapors

Note: The above referenced safety equipment must be worn when handling hazardous waste containers and equipment or materials visibly contaminated with coal-tar material. Entrance into the secured hazardous waste area is prohibited without wearing the safety equipment.

PROCEDURES FOR PERSONNEL IN CASE
OF HAZARDOUS WASTE SPILL OR OTHER EMERGENCY

IF MEDICAL ATTENTION IS NEEDED:

1. Call Methodist Hospital Emergency Services (932-5353)
2. Call St. Louis Park Police (920-2345)
3. Call MPCA (296-7373)
4. Call Containment Contractor

Determan Welding	571-8110
Fuel Recovery Co.	698-6133
Viking Service	423-2317
Crest Associates	824-8579
Slikwik	1-419-893-6551

5. Final Clean-up by Containment Contractor
6. Record Spill Event and Notify MPCA (use Form HWS-1)

IF NO MEDICAL ATTENTION IS NEEDED:

1. Call MPCA (296-7373)
2. Call St. Louis Park Police (920-2345)
3. Call Containment Contractor

Determan Welding	571-8110
Fuel Recovery Co.	698-6133
Viking Service	423-2317
Crest Associates	824-8579
Slikwik	1-419-893-6551

4. Final Clean-up by Containment Contractor
5. Record Spill Event and Notify MPCA (use Form HWS-1)

HAZARDOUS WASTE SPILL REPORT

1. TYPE AND AMOUNT OF WASTE SPILLED: _____

2. LOCATION, DATE, TIME OF SPILL: _____

3. OWNER OF PRODUCT: _____
OWNER OF FACILITY: _____
RESPONSIBLE PERSON: _____
ADDRESS: _____ PHONE: _____
4. WATERCOURSE AFFECTED: _____

5. DESCRIPTION OF PHYSICAL DAMAGE: _____

6. COST OF DAMAGE: _____

7. COST OF CLEAN-UP: _____

8. CAUSE OF SPILL: _____

9. ACTION TAKEN TO PREVENT RECURRENCE: _____

10. REPORTED BY: _____ REPORT DATE: _____
PHONE: _____